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November 14, 1991

U.S. Environmental Protection Agency
Region VIII
North Dakota/Colorado Section (8HWM-SR)
999 18th Street, Suite 500
Denver, Colorado 80202-2405
Attn: Ms. Gwendolyn Hooten, Lowry Landfill OUs 1/6 RPM

SUBJECT: LOWRY COALITION RESPONSE TO TAG COMMENTS ON THE GROUNDWATER CHARACTERISTICS TECHNICAL MEMORANDUM

Dear Ms. Hooten:

As you know, Section 7.1.3 of the Administrative Order on Consent for the Shallow and Deep Groundwater Operable Units (OUs 1/6) at Lowry Landfill requires that the Lowry Coalition respond to all TAG member comments on documents submitted to the EPA. The purpose of this letter is to protest as nonresponsive critical portions of the recent Lowry Coalition responses to Waste Management of Colorado, Inc. (WMC) and Chemical Waste Management, Inc. (CWM) comments on the Groundwater Characteristics Technical Memorandum.

Rather than responding to the content of each comment, the Coalition merely stated that the comment has been "noted," and that the Coalition would move forward as stated in the original Technical Memorandum. WMC/CWM finds this cavalier attitude toward TAG comments to be counter-productive to progress toward the development of a site model and remedy for the site. Specific comment responses by the Coalition that we find nonresponsive are:

Page 50, first paragraph

WMC/CWM's comment:

Unsaturated waste pit solids should not be included with refuse above the base of refuse.

Lowry Coalition's response:

The comment has been noted. For the purposes of this evaluation, unsaturated waste-pit solids were included with landfill refuse for calculation of the volume of unsaturated refuse.

Page 69, Section 6.2.4.1

WMC/CWM's comment:

The use of an average hydraulic conductivity of 1×10^{-3} cm/sec for refuse may overstate its potential contaminant contribution. Also, refuse should not be assumed isotropic. Daily and intermediate cover will produce anisotropy in both vertical and horizontal directions. Given the uncertainty in this parameter, selection of a single hydraulic conductivity value is not warranted. A range of values should be used to test the sensitivity of this parameter. We recommend using a range of horizontal hydraulic conductivities between 1×10^{-3} and 1×10^{-6} cm/sec, and horizontal to vertical anisotropy ratios between 1:1 and 100:1.

Lowry Coalition's response:

The comment has been noted. For the purposes of this evaluation, refuse was assumed to be isotropic with a hydraulic conductivity equal to 1×10^{-3} cm/s.

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Page 69, last line

WMC/CWM's comment:

"Hydraulic conductivity of the ? because of the ...", something is missing. If it is refuse, we disagree. Anisotropy of the refuse due to daily and intermediate cover would probably result in a hydraulic conductivity of the refuse less then the waste pit solids.

Lowry Coalition's response:

The sentence should read as follows:

"... hydraulic conductivity of the refuse because ..."

The comment has been noted. For the purposes of this evaluation, refuse was assumed to be isotropic.

Page 70, first full paragraph, line 3

WMC/CWM's comment:

Two waste pit pumping tests are insufficient to determine a geometric mean. The two hydraulic conductivity values calculated from these pumping tests should be stated. When the waste pits are modeled with a permeability that is two orders of magnitude lower than the refuse, the model will show that most of the flux to shallow and deep groundwater is from the refuse. We believe the daily and intermediate cover of the refuse would probably result in a lower permeability for the refuse compared to the waste pit solids. Regardless, ranges in both horizontal and vertical hydraulic conductivities should be used when a large uncertainty is so critical to the EA.

Lowry Coalition's response:

See response to Comment No. 6, Table 1 on page 10 of Addendum No. 1 of the Nature and Extent of Contamination TM.

The Coalition's citation does answer the first part of WMC/CWM's comment regarding geometric means and stating two values. However, no where in the citation is the second part of the comment addressed which, in our opinion, is the crux of the comment.

As can be readily seen from these responses, the Coalition's preferred approach to answering what WMC/CWM considers to be critical comments is to dismiss the issue.

A central theme runs throughout WMC/CWM's comments. That is, WMC/CWM are very concerned that the hydraulic characteristics assigned to the refuse in the Groundwater Characteristics Technical Memorandum will serve as input parameters for the groundwater modeling to be used as a basis for the Endangerment Assessment (EA). If the hydraulic parameters quoted in the Coalition's Groundwater Characteristics Technical Memorandum are used unchanged in the modeling effort, then the results of the model will falsely indicate that the refuse, and not the waste pits, are contributing most of contaminants to the site. WMC/CWM firmly believe that a sensitivity analysis is essential for these critical input parameters.

The Lowry Coalition continues to attempt to misuse such "technical" bases upon which to fight apportionment issues. WMC/CWM strongly disagree with this procedure, believing that apportionment issues are not relevant in such documents. Technical issues should not be skewed to foster allocation posturing. Should the indications of the Groundwater Characteristics Technical Memorandum and Lowry Coalition response to our comments be echoed in the groundwater model, then WMC/CWM predict a long and arduous technical debate about the representativeness of the model.

While we acknowledge that the overall project schedule requires the Coalition to produce a groundwater model by a certain date (flow model submitted to EPA on October 21, transport model submitted to EPA on October 31 - neither of which were distributed to TAG members), dismissing technical oversight during the model construction/input phase will not reduce the overall project schedule. Rather, it will lead to prolonged technical debate and disagreement over the model results in the Remedial Investigation report and EA. Undoubtedly, prolonged debate and disagreement could very well result in the need for more modeling, thereby lengthening, not shortening, the overall project schedule.

We believe careful consideration of our comments on the Groundwater Characteristics Technical Memorandum is essential to the development of a technically-sound, unbiased ground water model. Accordingly, we request EPA to require substantive evaluation of our comments by the Coalition prior to proceeding with further work on the model.

Thank you for your assistance.

Respectfully,

Steven D. Richtel, P.G.
Region Remedial Projects Manager

cc: E. Demos, Denver
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TAG Members

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